

Department of Veterans Affairs Carl T. Hayden Veterans Affairs Medical Center Site Electrical Distribution Upgrade

Approved: Director

Approved: Associate Director

Approved: Administrator to Facility Services

Approved: Assistant Administrator to Facility Services

Approved: Chief of Projects

Approved: Project Manager

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	E	EACH	K	KICKPLATE	R	RADIUS, RISER
ACST	ACOUSTIC (AL)	EWC	ELECTRIC WATER COOLER	KIT	KITCHEN	RWD	REDWOOD
ACT	ACOUSTICAL CEILING TILE	ELEC	ELECTRIC (AL)	KB	KNEE BRACE	REF	REFERENCE, REFRIGERATOR
APC	ACOUSTICAL WALL PANEL	ELV	ELEVATION	L	LAB	REIN	REINFORCE
AWP	ACOUSTICAL WALL	EMER	EMERGENCY	LAM	LAMINATE	REOD	REQUIRED
AWT	TREATMENT	ENGR	ENGINEER	LC	LAUNDRY CHUTE	RF	RESILIENT BASE
ADJ	ADJUSTABLE	EQU	EQUAL	LV	LAUNDRY	RA	RETURN AIR
AC	AIR CONDITIONING	EQUIP	EQUIPMENT	LT	LIGHT	RV	REVISION
AHU	AIR HANDLING UNIT	EXIST	EXISTING	LD	LINEAR DIFFUSER	RD	ROOF DRAIN
ALT	ALTERNATE	ETR	EXISTING TO REMAIN	LC	LINEN CLOSET	RM	ROOM
ALUM	ALUMINUM	EXP	EXPANSION	LL	LIVE LOAD	RO	ROUGH OPENING
AB	ANCHOR BOLT	EXP BT	EXPANSION BOLT	LLV	LONG LEG VERTICAL	RS	ROUGH SAWN
L	ANGLE	EJ	EXPANSION JOINT	LPT	LOW POINT	S	SCHEDULE
APPROX	APPROXIMATE	EXP	EXPOSED	M	MACHINE	SECT	SECTION
ARCH	ARCHITECT (URAL)	EIFS	EXTERIOR INSULATION AND FINISH SYSTEM	MACH	MACHINE	SHTG	SHEATHING
ASPH	ASPHALT	EXT	EXTERIOR	MFD	MANUFACTURED	SHV	SHELVING
ASSY	ASSEMBLY	EXP	EXPOSED	MFR	MANUFACTURER	SIM	SIMILAR
AUTO	AUTOMATIC	F	FABRIC WALL COVERING	MKB	MARBLE BASE	S	SOUTH
AWN	AWNING	FT	FEET, FOOT	MKB	MARBLE FLOOR	SP	SPECIAL FINISH
		FGL	FIBERGLASS	MKB	MARBLE BOARD	ST	STANDARD
		FIN	FINISH	MKB	MARBLE BOARD	STL	STEEL
		FIN GR	FINISH GRADE	MKB	MARBLE BOARD	STL JST	STEEL JOIST
		FDV	FIRE DEPARTMENT VALVE	MKB	MARBLE BOARD	STOR	STORAGE
		FE	FIRE EXTINGUISHER	MKB	MARBLE BOARD	STRUC	STRUCTURAL
		FE	FIRE EXTINGUISHER	MKB	MARBLE BOARD	SUS	SURFACE FOUR SIDES
		FE	FIRE EXTINGUISHER	MKB	MARBLE BOARD	SUSP	SUSPEND
		FE	FIRE EXTINGUISHER	MKB	MARBLE BOARD	SW	SWITCH
		FE	FIRE EXTINGUISHER	MKB	MARBLE BOARD	SYMM	SYMMETRICAL

SYMBOL LEGEND

SYMBOL	DESCRIPTION
	NEW WALL
	EXISTING WALL
	DEMOLITION
	2 HOUR FIRE WALL
	2 HOUR FIRE/SMOKE WALL
	30 MINUTE SMOKE BARRIER
	SMOKE RESISTIVE HAZARDOUS AREA
	CONTRACT LIMIT LINE
	COLUMN CENTER LINE
	ELEVATION NUMBER
	SHEET WHERE APPEARS
	WINDOW TAG
	DOOR NUMBER
	EXISTING COLUMN CENTER LINE
	PLAN OR DETAIL NUMBER
	BUILDING SECTION CUT
	OTHER SECTION CUT
	DETAIL FLAG NUMBER
	GLASS TYPE
	WINDOW TYPE
	WALL TYPE
	KEYED NOTE
	DASHED LINE AROUND AREA DETAILED
	INTERIOR FINISH TYPE
	FURNITURE, FIXTURE, EQUIPMENT
	WINDOW TREATMENT TYPE
	EQUIPMENT

CODE REFERENCES

BUILDING CODE:
2015 NATIONAL FIRE PROTECTION ASSOCIATION 101 (NFPA 101)

ACCESSIBILITY CODE & GUIDELINES:
ABAA & BFDG

MECHANICAL CODE:
2012 INTERNATIONAL MECHANICAL CODE

ELECTRICAL CODE:
2014 NATIONAL ELECTRIC CODE

BUILDING INFORMATION

BUILDINGS INVOLVED IN PROJECT INCLUDE THE FOLLOWING:
BUILDING 1, 8, 16, 21, 31

AREA OF REMODEL IS MECHANICAL AND ELECTRICAL YARD

TYPE 1 (332), FULLY SPRINKLED
3-HOUR EXTERIOR BEARING WALLS, 3-HOUR STRUCTURE
PROTECTION, AND 2-HOUR FLOORS

NO OCCUPANT LOAD WILL BE AFFECTED BY THIS PROJECT OR
THE CONSTRUCTION OPERATION

ALTERNATES

ADDITIVE ALTERNATE #1 - PROVIDE MV FEEDER SERVING ESS TRANSFORMER NT1F
VIA ROUTE EAST OF BUILDINGS 1 AND 16. PROVIDE (5) SPARE 5" CONDUIT IN
DUCTBANK. PROVIDE MANHOLES AS INDICATED.

ADDITIVE ALTERNATE #2 - REMOVE AND REPLACE EXISTING MEDIUM VOLTAGE
TRANSFORMERS WITH SIMILAR EQUIPMENT BUT WITH FR3 OIL AND FM GLOBAL
APPROVED RATING. FOR THIS ALTERNATE ALL TRANSFORMERS IDENTIFIED
SHALL BE REPLACED HOWEVER AN INDEPENDENT BREAKDOWN COST FOR EACH
TRANSFORMER SHALL BE REQUIRED.

ALTERNATE #3 - PROVIDE BASEMENT EXPANSION IN LIEU OF D-WING ELECTRICAL
ENCLOSURE. PROVIDE 1500 KVA DRY-TYPE SUBSTATION TO REPLACE T-69 AND
T-24 AND 1500 KVA DRY-TYPE SUBSTATION TO REPLACE TRANSFORMER NTF.

ALTERNATE #4 - SAME AS ALTERNATE #3 EXCEPT IN LIEU OF DRY-TYPE
SUBSTATIONS. SUBSTATIONS ARE INDOOR RATED. FM GLOBAL APPROVED. FR-3
FLUID FILLED TRANSFORMERS WITH INTEGRAL SELF-CONTAINMENT AND FUSING
AND SWITCHING IMMERSIBLE IN THE DIELECTRIC. RESULTING IN A SMALLER
FOOTPRINT.

ALTERNATE #5 - IN LIEU OF NEW STEP-UP AND STEP-DOWN TRANSFORMERS T-69A
AND T-69B; SERVE BUILDING 9 EES PANEL 5YGRPH AT 480V FROM 151PQWGR1
DIRECT.

DEDUCTIVE ALTERNATE #6 - REPLACE TWO MV PULLBOXES MH-PVS AND MH-PVN WITH
FULL SIZE MANHOLES CONFORMING TO VA REQUIREMENTS.

DEDUCTIVE ALTERNATE #7 - PROVIDE LOUVERED METAL PANELS IN LIEU OF
PERFORATED SCREEN PANELS.

DEDUCTIVE ALTERNATE #8 - DELETE EQUIPMENT ENCLOSURE AT 'MVPMSW-2'.

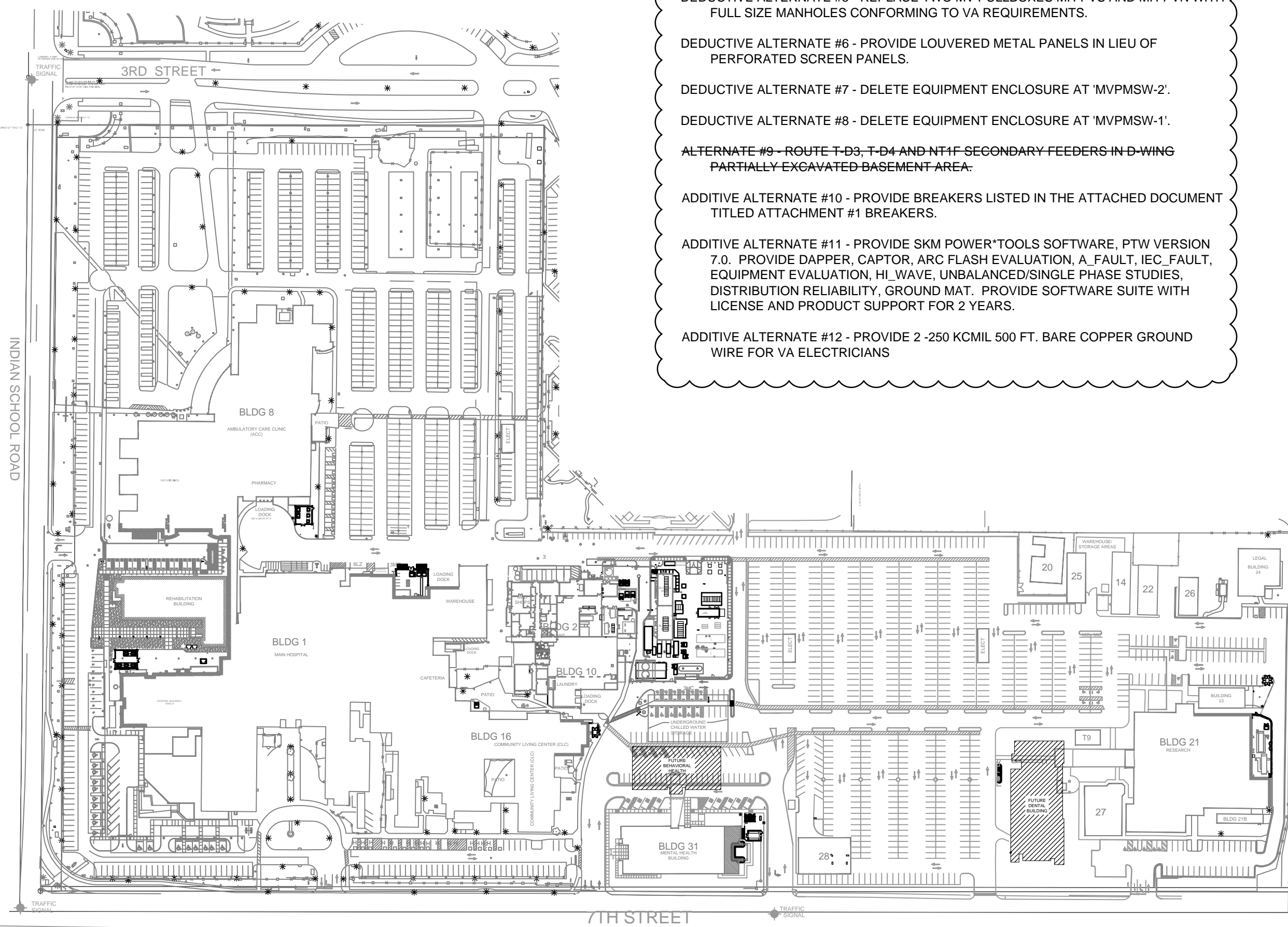
DEDUCTIVE ALTERNATE #9 - DELETE EQUIPMENT ENCLOSURE AT 'MVPMSW-1'.

ALTERNATE #10 - ROUTE T-D3, T-D4 AND NTF SECONDARY FEEDERS IN D-WING
PARTIALLY EXCAVATED BASEMENT AREA.

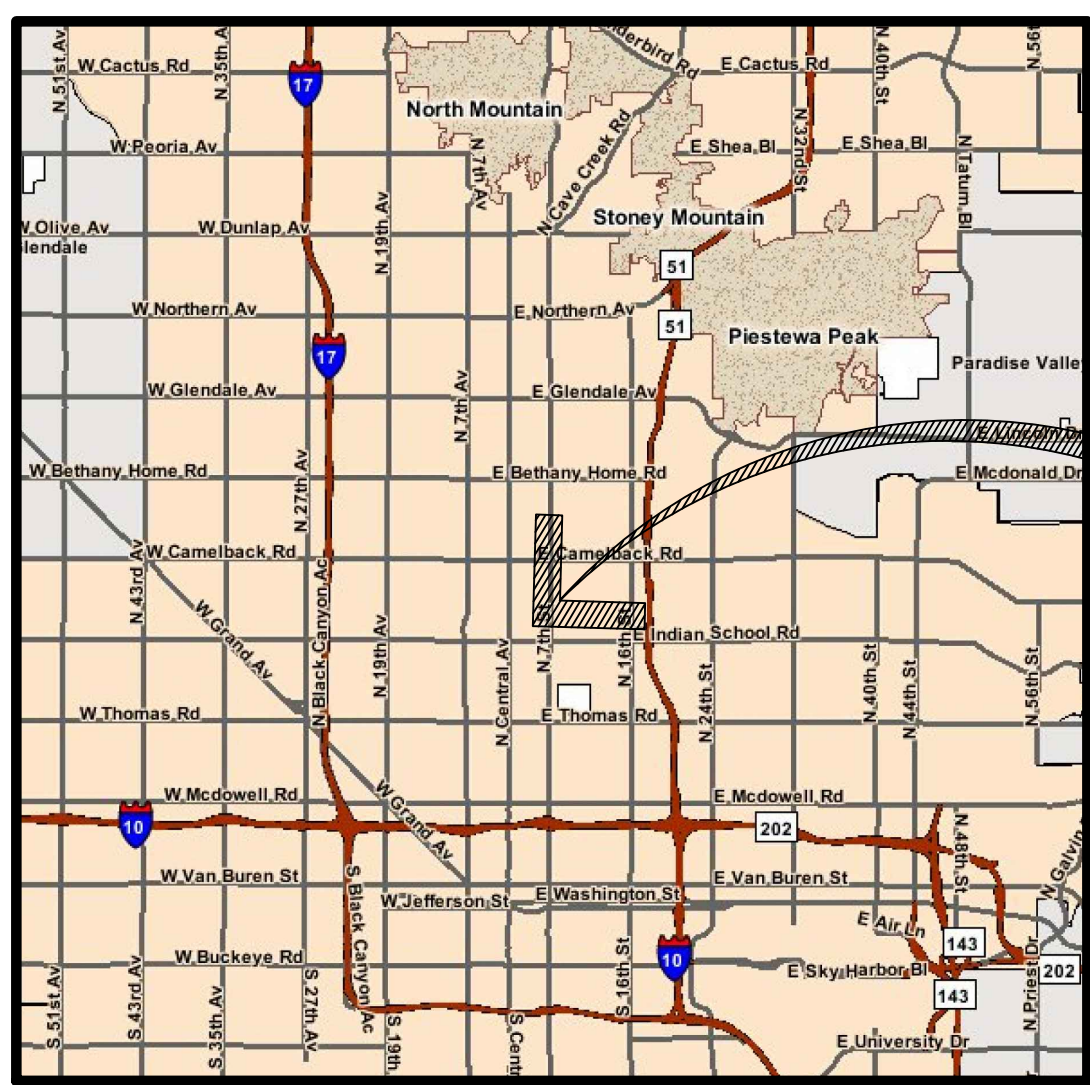
ADDITIVE ALTERNATE #11 - PROVIDE SKM POWER TOOLS SOFTWARE, PTW VERSION
7.0. PROVIDE DAPPER, CAPTOR, ARC FLASH EVALUATION, A. FAULT, IEC, FAULT,
EQUIPMENT EVALUATION, H. WAVE, UNBALANCED SINGLE PHASE STUDIES,
DISTRIBUTION RELIABILITY, GROUND MAT. PROVIDE SOFTWARE SUITE WITH
LICENSE AND PRODUCT SUPPORT FOR 2 YEARS.

ADDITIVE ALTERNATE #12 - PROVIDE 2-250 KCMIL 500 FT. BARE COPPER GROUND
WIRE FOR VA ELECTRICIANS

FACILITY MAP



VICINITY MAP



PROJECT PHASING NOTES

WORK HOURS FOR THE UNDERGROUND PORTION OF THE WORK, AND FOR AREAS WHICH IMPACT BUILDING
ENTRANCES AND FACILITY FUNCTIONS SHALL BE FROM 20:00 TO 05:30 HOUR, MONDAY THROUGH FRIDAY. TRAFFIC
CONTROL SHALL BE THE CONTRACTOR'S RESPONSIBILITY, INCLUDING AHEAD, TRAFFIC CONTROL PLANS, FLAGGERS,
SIGNAGE, BARRICADES, LIGHTING, PLATING, AND ANY ADDITIONAL RESOURCES AS REQUIRED ENSURING FACILITY
ACCESS AND FACILITY FUNCTION IS NOT DISRUPTED. ALL TRENCHES AND HOLES SHALL BE PLATED AND RESTORED FOR
TRAFFIC BY 05:30, MONDAY, THROUGH FRIDAY. NOTE: SATURDAY AND SUNDAY WORK TIMES ARE NOT RESTRICTED.

TRENCHING AND WORK ZONES WILL NEED TO BE COORDINATED WITH VA TO MINIMIZE DISRUPTIONS TO THE
CAMPUS. UNDERGROUND WORK WILL NEED TO BE PHASED BY AREAS AND MULTIPLE AREAS MAY NOT BE ALLOWED.
IN ADDITION TO SPECIFICATION REQUIREMENTS NOISE CONTROL PLANS SHALL BE REQUIRED TO ADDRESS SOURCE
CONTROL AND PATH CONTROL TO ENSURE PATIENTS, EMPLOYEES AND FACILITY FUNCTIONS ARE NOT DISTURBED.

EXACT METHODS AND PROCEDURES FOR UTILITY OUTAGES WILL REQUIRE ADVANCE COORDINATION AND PLANNING TO
INCLUDE A MINIMUM APPROVAL REQUIREMENT OF 1 MONTH PRIOR. SCHEDULE APPROVAL AND 100% OF
SUBMITTAL APPROVALS SHALL BE REQUIRED PRIOR TO CONSTRUCTION START. ALL OUTAGES SHALL BE COMPLETED
IN A MANNER THAT ELIMINATES, OR LIMITS, DISTURBANCE TO THE FACILITY TO INCLUDE TEMPORARY GENERATORS,
CABLING, ETC. AS REQUIRED.

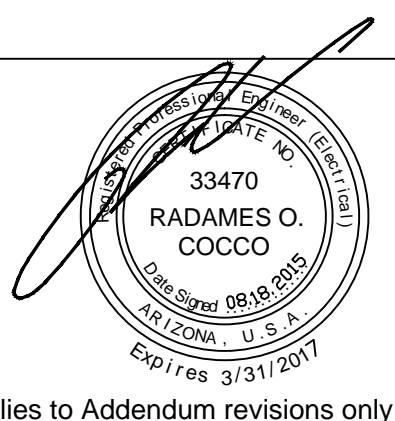
MOST OF THE CAMPUS MV TRANSFORMERS ARE SERVED VIA PRIMARY SELECTIVE DISTRIBUTION. IT SHOULD BE
POSSIBLE TO PHASE THE WORK MOVING FEEDS FROM ONE SOURCE TO ANOTHER. WHERE MV DISTRIBUTION DOES
NOT PERMIT FOR SWITCHING BETWEEN SOURCES, OR WHERE LV DISTRIBUTION IS RADIAL, WITHOUT MAIN-TIE-MAIN,
PROVIDE TEMPORARY POWER PROVISIONS TO MAINTAIN SERVICE TO AFFECTED SYSTEMS AS REQUIRED.

EXISTING FACILITY LOADS ARE ON MV-SES-1A, HOWEVER THE SYSTEM MAY BE RECONFIGURED DUE TO FACILITY
REQUIREMENTS AT THE TIME OF CONSTRUCTION START. CONTRACTOR SHALL BE REQUIRED TO VERIFY AND
INCORPORATE INTO SCHEDULING AND PLANNING. FOR THE PURPOSE HERE WE SHALL ASSUME A BALANCED LOAD
UTILIZING MV-SES-1A AND MV-SES-2A.

TYPICAL DISTRIBUTION ELEMENT PHASING SHALL BE AS FOLLOWS:

1. TRENCH FOR NEW DUCTBANKS AND NEW MANHOLES.
2. INSTALL NEW DUCTS AND NEW MANHOLES AS PERMITTED BASED ON DE-ENERGIZED EQUIPMENT.
3. CONSTRUCT NEW EQUIPMENT ENCLOSURES AND PADS.
4. MOVE LOADS IMPACTED BY THIS PROJECT TO MV-SES-1A.
5. INSTALL NEW TRANSFORMERS, PRIMARY FEEDERS AND SECONDARY FEEDERS. CONNECT TO EQUIPMENT.
6. RELOCATE LOADS TO MV-SES-2A.
7. INSTALL NEW TRANSFORMERS, PRIMARY AND SECONDARY FEEDERS. CONNECT TO NEW EQUIPMENT.

CONSULTANT:



CONSULTANT:

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Reed
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ARCHITECT/ENGINEERS:



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TITLE SHEET

Approved: Project Director

Project Title
**SITE ELECTRICAL DISTRIBUTION
UPGRADE**

Location
PHOENIX, AZ

Date
03-06-2015

Checked
OR

Drawn
DC

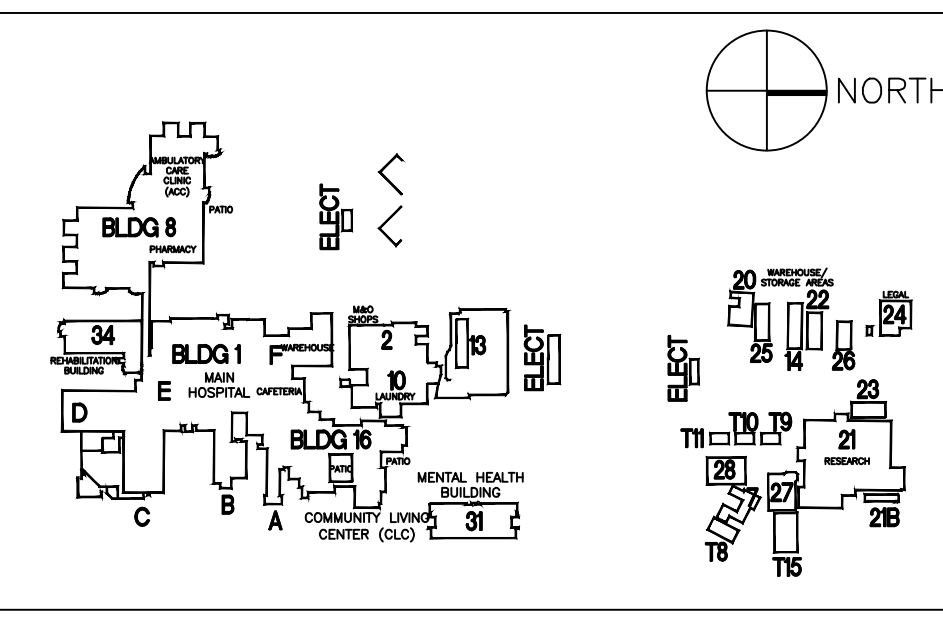
Dwg
GI-001

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Office of
Construction
and Facilities
Management



KEY PLAN



'BID SET'

Project Number
644-13-015 / 644-14-003

Building Number
1, 8, 16, 21, 31

Drawing Number
GI-001